

Form PTO 1449 US Department of
Commerce Patent
and Trademark
Office

ATTY DOCKET NO:
P-IX 2965

SERIAL NO.
09/016,061

APPLICANT: Huse and Glaser

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

FILING DATE:
January 30, 1998

GROUP ART:
1644

U.S. PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

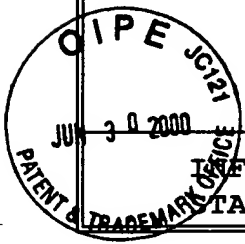
ME	Adams et al., "Increased Affinity Leads to Improved Selective Tumor Delivery of Single-Chain Fv Antibodies," <u>Cancer Res.</u> , 58:485-490 (1998).
	Hawkins et al., "Selection of Phage Antibodies by Binding Affinity, Mimicking Affinity Maturation," <u>J. Mol. Biol.</u> , 226:889-896 (1992).
	Myszka et al., "Kinetic analysis of a protein antigen-antibody interaction limited by mass transportation on an optical biosensor," <u>Biophys. Chem.</u> , 64:127-137 (1997).
	Newman et al., "'Primatization' of Recombinant Antibodies for Immunotherapy of Human Diseases: A Macaque/Human Chimeric Antibody Against Human CD4," <u>Biotechnol.</u> , 10:1455-1460 (1992).
	Schier et al., "Isolation of Picomolar Affinity Anti-c-erbB-2 Single-chain fv by Molecular Evolution of the Complementarity Determining Regions in the Center of the Antibody Binding Site," <u>J. Mol. Biol.</u> , 263:551-567 (1996).
M	Schier et al., "Isolation of High-Affinity Monomeric Human Anti-c-erbB-2 Single-chain Fv Using Affinity-driven Selection," <u>J. Mol. Biol.</u> , 255:28-43 (1996).

EXAMINER

Gambel 7/17/00

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form PTO 1449 US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-IX 2965	SERIAL NO. 09/016,061
	APPLICANT: Huse and Glaser	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: January 30, 1998	GROUP ART: 1644

W		Schier and Marks, "Efficient in vitro affinity maturation of phage antibodies using BIAcore guided selections," <u>Hum. Antibod. Hybridomas</u> , 7:97-105 (1996).
M		Thompson et al., "Affinity Maturation of a High-Affinity Human Monoclonal Antibody Against the Third Hypervariable Loop of Human Immunodeficiency Virus: Use of Phage Display to Improve Affinity and Broaden Strain Reactivity," <u>J. Mol. Biol.</u> , 256:77-88 (1996).

RECEIVED
JUL 25
US PATENT & TRADEMARK OFFICE

EXAMINER Gambler 7/17/00	DATE CONSIDERED
-----------------------------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449 US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-IX 2965	SERIAL NO. 09/016,061
	APPLICANT: Huse and Glaser	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: January 30, 1998	GROUP: 16434



U.S. PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
<i>W</i>	5,693,762	12/2/97	Queen et al.	530	387.3	—
<i>N</i>	⁷⁵³ 5,573,230	5/19/98	Brooks et al.	424	158.1	—

FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)

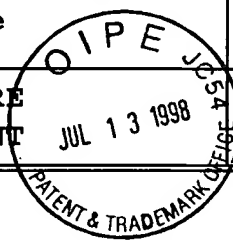
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

RECEIVED
AUG 19 PAID
GROUP 1900

EXAMINER <i>Gamber 7/17/00</i>	DATE CONSIDERED
-----------------------------------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449 US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-IX 2965	SERIAL NO. 09/016,061
	APPLICANT: Huse and Glaser	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: January 30, 1998	GROUP: 1643



RECEIVED
JUL 15 1998
GROUP 1800

U.S. PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
<i>Mo</i>	5,225,539	07/06/93	Winter, Gregory P.	530	387.3	—
	5,264,563	11/23/93	Huse, William D.	536	25.3	—
	5,523,388	06/04/96	Huse, William D.	536	22.1	—
	5,585,089	12/17/96	Queen et al.	424	133.1	—
	5,578,704	11/26/96	Kim et al.	530	388.22	—

FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
	0 451 216 B1	10/16/91	Europe	C12P21	08	—
	0 682,040 A1	11/15/95	Europe	C12K16	46	—

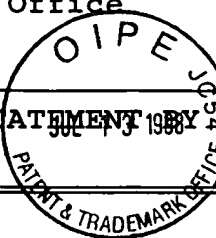
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

	Brooks et al., "Integrin α V β 3 Antagonists Promote Tumor Regression by Inducing Apoptosis of Angiogenic Blood Vessels" <u>Cell</u> 79:1157-1164 (1994)
	Cheresh, D.A., "Human endothelial cells synthesize and express an Arg-Gly-Asp-directed adhesion receptor involved in attachment to fibrinogen and von Willebrand factor" <u>Proc. Natl. Acad. Sci. USA</u> 84:6471-6475 (1987)
<i>Mo</i>	Cheresh and Spiro, "Biosynthetic and Functional Properties of an Arg-Gly-Asp-directed Receptor Involved in Human Melanoma Cell Attachment to Vitronectin, Fibrinogen, and von Willebrand Factor" <u>J. Biol. Chem.</u> 262(36):17703-17711 (1987)

EXAMINER <i>GAMBER 7/17/00</i>	DATE CONSIDERED
-----------------------------------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449 US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-IX 2965	SERIAL NO. 09/016,061
	APPLICANT: Huse and Glaser	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: January 30, 1999	GROUP: 164H



JUL 15 1998

GROUP 1800

Mr	Choi et al., "Inhibition of neointimal hypersplasia by blocking $\alpha\beta 3$ integrin with a small peptide antagonist GpenGRGDSPCA" <u>J. Vascular Surg.</u> , 19:125-134 (1994) ✓
	Chothia et al., "Canonical Structures for the Hypervariable Regions of Immunoglobulins" <u>J. Mol. Biol.</u> 196:901-917 (1987) ✓
	Clark, M. (ed.), "Protein Engineering of Antibody Molecules for Prophylactic and Therapeutic Applications in Man," Nottingham, England: Academic Titles (1993)
	Day, E.D., <u>Advanced Immunochemistry</u> , Second Ed., Wiley-Liss, Inc., New York, NY (1990) ✓
	Devlin et al., "Random Peptide Libraries: A Source of Specific Protein Binding Molecules" <u>Science</u> 249:404-406, (1990) ✓
	Foote and Milstein, "Kinetic maturation of an immune response" <u>Nature</u> 352:530-532 (1991) ✓
	Glaser et al., "Antibody Engineering by Condon-Based Mutagenesis in a Filamentous Phage Vector System" <u>J. Immunol.</u> 149:3903-3913 (1992) ✓
	Huse, W.D., "Combinatorial Antibody Expression Libraries in Filamentous Phage" In: Antibody Engineering: A Practical Guide, C.A.K. Borrebaeck, ed. W.H. Freeman and Co., Publishers, New York, pp. 103-120 (1991) ✓
	Huse et al., "Application of a Filamentous Phage pVIII Fusion Protein System Suitable for Efficient Production, Screening, and Mutagenesis of F(ab) Antibody Fragments" <u>J. Immunol.</u> 149:3914-3920 (1992) ✓
	Huston et al., "Antigen Recognition and Targeted Delivery by the Single-Chain Fv" <u>Cell Biophysics</u> , 22:189-224 (1993) ✓
	Kabat et al., U.S. Dept. of Health and Human Services, "Sequences of Proteins of Immunological Interest" Volume 1 (1991)
u	MacCallum et al., "Antibody-antigen Interactions: Contact Analysis and Binding Site Topography" <u>J. Mol. Biol.</u> 262:732-745 (1996) ✓

RECEIVED

JUL 15 1998

EXAMINER GAMBER 7/17/00	DATE CONSIDERED GROUP 1800
----------------------------	-------------------------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449 US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-IX 2965	SERIAL NO. 09/016,061
	APPLICANT: Huse and Glaser	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: January 30, 1998	GROUP: 16434



JUL 15 1998

GROUP 1800

16	Moore et al., "Directed evolution of para-nitrobenzyl esterase for aqueous-organic solvents" <u>Nature Biotechnology</u> 14:458-467 (1996) ,
	Padlan, Eduardo A., "A Possible Procedure For Reducing the Immunogenicity of Antibody Variable Domains While Preserving Their Ligand-Binding Properties" <u>Molecular Immunol.</u> 28(4/5):489-498 (1991)
	Plückthun and Skerra, "Expression of functional antibody Fv and Fab fragments in <i>escherichia coli</i> ," <u>Meth. Enzymol.</u> 178:497-515 (1989)
	Rosok et al., "A Combinatorial Library Strategy for the Rapid Humanization of Anticarcinoma BR96 Fab" <u>J. Biol. Chem.</u> 271:22611-22618 (1996)
	Sandberg and Terwilliger, "Engineering multiple properties of a protein by combinatorial mutagenesis" <u>Proc. Natl. Acad. Sci.</u> 90:8367-8371 (1993)
	Singer et al., "Optimal Humanization of 1B4, an Anti-CD18 Murine Monoclonal Antibody, is Achieved by Correct Choice of Human V-Region Framework Sequences" <u>J. Immunol.</u> 150(7):2844-2857 (1993)
16	Yelton et al., "Affinity Maturation of the BR96 Anti-Carcinoma Antibody by Condon-Based Mutagenesis" <u>J. Immunol.</u> 155:1994-2004 (1995)

JUL 15 1998
GROUP 1800

EXAMINER Gamber	DATE CONSIDERED
--------------------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.